



SmartFarm: Turning Analytics into Farm Implements

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Collaborators:

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Sedgwick Reserve: Director Kate McCurdy

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Agriculture is Underserved by Technology

- The electronic Consumer boom has not yet come to Ag
 - Despite the need to increase efficiencies and productivity
 - Must do more with less **sustainably**
- Despite vast amounts of information surrounding crop lifecycle
 - Weather, historical records, sensors, images (NDVI/thermal)
- The Opportunity
 - Understanding is key to **Food-Energy-Water** management
 - Global: 500M people today are food-insecure
 - 15M US children going hungry tonight; 9B people to feed by 2050

<http://www.cdfa.ca.gov/statistics/>

<http://www.ers.usda.gov/topics/international-markets-trade/global-food-security.aspx>

Andrews-Speed et. al 2015



Analytics as Farm Implements

- Ag needs



- Amazon Recommendations for irrigation and input scheduling

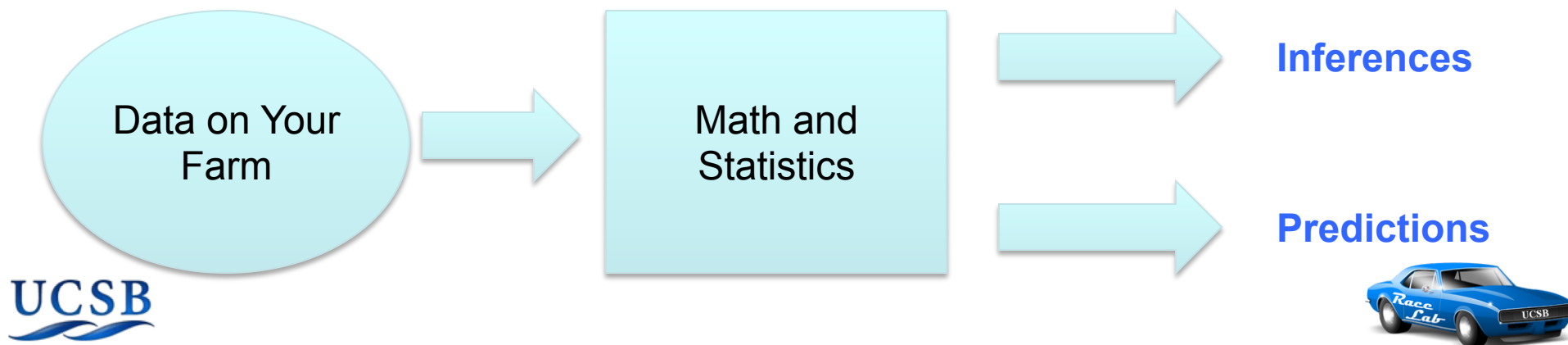


- Google Search for crop disease

- Tinder for pests

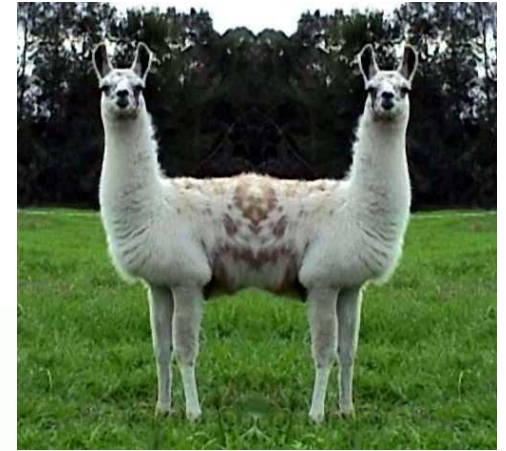


- DropBox/Gmail for intelligence sharing



SmartFarm Research at UCSB

- **Hybrid-cloud approach**
 - Move the data to the code or the code to the data, which ever is better
 - Give the farmer control
- **Make it simple**
 - Needs to be like a household appliance
 - App Store for Ag
- **Make it general**
 - Multi-analytics: Single *unifying* platform supporting multiple data acquisition and analytics technologies



Make it useful for Students

- Validating research through collaborations with start-ups
 - Innovation partnerships



Make It Fun



Seminar
INT 94RY
Winter 2016



Progress To Date

- Over \$1.5M in research funding for UCSB SmartFarm
- Significant outreach to the community
 - Meetings with growers and farm managers
 - Student involvement (local high-schools and UCSB)
 - Key partnerships established
 - Ag industry (startups, large players), foundations (e.g. Bluesky Sustainable Living Center), small holders, experimental farms
- Visibility: TEDx talk, Invited/Distinguished Lectures, news articles
 - <http://cs.ucsb.edu/news/2189>, <http://www.news.ucsb.edu/2015/015515/data-tomato>
 - Public lecture: April 15th at UCSB's Sedgwick Reserve
- W16 Seminar -- INT94RY: Working Across Disciplines for More Effective Food Production
- Award funds: summer support, student support, public lecture

